

Application No.: 10/764,478

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A plate supplying apparatus for transporting and supplying a stack of plates one by one while reversing faces of each plate, the apparatus comprising:

a storage section for storing a stack of plates;

a plate suction section for sucking around an end portion of a plate to be transported which is stored in the storage section;

a support section for supporting the plate suction section;

a linear motion drive mechanism for moving the plate suction section and the support section in a plate transport direction;

a rotation drive mechanism for turning the plate sucked by the plate suction section by pivoting the plate suction section and the support section, independently of the movement of the plate suction section and the support section in the plate transport direction;

a linear motion drive mechanism control section for controlling an operation of the plate suction section and the linear motion drive mechanism;

a rotation drive mechanism control section for ~~adjusting a pivot angle by which the rotation drive mechanism allows~~ controlling the rotation drive mechanism so as to allow the plate suction section and the support section to pivot, in accordance with the amount of movement of the support section in the plate transport direction per unit a predetermined rotation drive pattern table, at a pivot angle in association with a linear motion position of the support section in the plate transport direction; and

a supplying section for supplying the plate sucked by the plate suction section and transported toward another equipment device, wherein

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the rotation drive pattern table, which defines the pivot angle of the plate suction section and the support section in association with the linear motion position of the support section in the plate transport direction, and of which a plurality are prepared, is adapted to the plates expected to be stored in the storage section; and

the rotation drive pattern table selected from the plurality of the rotation drive pattern tables is used, based on plate information indicating various information relating to the plate, by the rotation drive mechanism control section.

2. (Currently Amended) The plate supplying apparatus according to claim 1, wherein the rotation drive mechanism control section ~~adjusts the pivot angle~~ controls the rotation drive mechanism at the pivot angle at which, until the plate is removed from the storage section, ~~such that~~ the end portion of the plate follows a line deviated from at least a reference path, which is an arc of a circle whose center is an other end portion of the plate and whose radius is the length of the plate, toward the other end portion of the plate.

3. (Currently Amended) The plate supplying apparatus according to claim 2, wherein:

the rotation drive mechanism control section performs a separation operation by ~~adjusting~~ controlling the rotation drive mechanism at the pivot angle such that at which the amount of deviation of the end portion from the reference path is greater at a point when the end portion of the plate has just been lifted off other plates stored in the storage section than ~~other points elsewhere~~ in the plate transport direction.

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4. (Currently Amended) The plate supplying apparatus according to claim 2, wherein:

the rotation drive mechanism control section ~~adjusts~~ controls the rotation mechanism at the pivot angle such that at which a ratio of the pivot angle to the amount of movement of the support section in the plate transport direction ~~per unit~~ is different between before and after the plate is removed from the storage section.

5. (Original) The plate supplying apparatus according to claim 1, wherein:

the linear motion drive mechanism control section generates linear motion drive pulses for driving the linear motion drive mechanism and outputs the linear motion drive pulses to the linear motion drive mechanism; and

the rotation drive mechanism control section generates rotation drive pulses for driving the rotation drive mechanism, by removing at least one of the linear motion drive pulses generated by the linear motion drive mechanism control section, and outputs the rotation drive pulses to the rotation drive mechanism.

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6. (Currently Amended) The plate supplying apparatus according to claim 5, wherein:

~~the rotation drive mechanism control section includes a rotation drive pattern memory in which a rotation drive pattern table is prestored so as to conform to plates stored in the storage section;~~ the rotation drive pattern table ~~describing~~ describes whether or not to drive the rotation drive mechanism in association with the linear motion position addresses of the support section in the plate transport direction in accordance with the plates stored in the storage section;

the rotation drive control mechanism control section includes a rotation drive pattern memory in which the rotation drive pattern table is prestored; and

the rotation drive mechanism control section retrieves, by referring to the rotation drive pattern table, information about whether or not to drive the rotation drive mechanism with respect to a linear motion position address calculated using the linear motion drive pulses, and generates, if the rotation drive mechanism is not driven, the rotation drive pulses ~~from which the linear motion drive pulses corresponding to the rotation drive are removed.~~

7. (Currently Amended) The plate supplying apparatus according to claim 6, wherein:

the rotation drive pattern memory has prestored therein a plurality of the rotation drive pattern tables ~~adapted to the respective plates expected to be stored in the storage section; and~~

the rotation drive pattern table used by the rotation drive mechanism control section when generating the rotation drive pulses, is selected by an instruction of the linear motion drive mechanism control section.

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8. (Original) The plate supplying apparatus according to claim 7, wherein, in the rotation drive pattern table, a pattern for taking out the plate from the storage section is different from a pattern for moving the plate suction section and the support section toward the storage section.

9. (Original) The plate supplying apparatus according to claim 7, wherein the plurality of the rotation drive pattern tables are prestored in the rotation drive pattern memory in accordance with the size, type, or remaining number of plates stored in the storage section.

10. (Original) The plate supplying apparatus according to claim 1, wherein:
the support section supports the plate suction section via compression springs so as to move up and down; and

when the plate suction section sucks a plate stored in the storage section, the plate suction section is moved and placed in a direction outward from a center of pivot of the plate suction section and the support section by means of its weight and a pressing force of the compression springs.

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11. (Currently Amended) The plate supplying apparatus according to claim 10 further comprises:

a roller section for supporting the plate, which is provided in the plate suction section via extension springs so as to move up and down; and

roller guide rails for guiding, when the plate supported by the plate suction section and the roller section is taken out to the supplying section, the roller section to a predetermined position with respect to the center of pivot, and

wherein, when the plate is taken out to the supplying section, ~~a supply of negative pressure to suction by~~ the plate suction section is terminated and the plate suction section is moved and placed in a direction inward toward the center of pivot by means of its weight.

12. (Currently Amended) The plate supplying apparatus according to claim 1, wherein the storage section includes a cassette which stores the plates in a ~~slanting~~ position slanted with respect to vertical.

13. (Original) The plate supplying apparatus according to claim 12, wherein the plate transport direction is a horizontal direction.

14. (Original) The plate supplying apparatus according to claim 13, wherein:

the plates are stored in the cassette such that their image recording layers face downwards; and

the plate suction section sucks a support layer of the plate stored in the cassette, the support layer being an opposite side of the image recording layer.

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15. (Currently Amended) The plate supplying apparatus according to claim 14, wherein:

~~the supplying section supplies the plate taken out from the cassette toward~~ the equipment device comprises a cylindrical recording drum[[; and]] on which the plate is mounted around a perimeter of the recording drum such that the image recording layer faces outwards.

16. (Original) The plate supplying apparatus according to claim 15, wherein the linear motion drive mechanism includes:

linear shafts which extend horizontally;

linear motion bases which travel along the linear shafts; and

a motor for allowing the linear motion bases to travel along the linear shafts, wherein:

the plate suction section and the support section are placed so as to rotate freely with respect to the linear motion bases; and

the rotation drive mechanism includes a motor for rotating the plate suction section and the support section with respect to the linear motion bases, which is secured to the linear motion bases.